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EXAMINER	
WANG, JIN CHENG	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/863,405	VAN DOAN ET AL.
	Examiner	Art Unit
	Jin-Cheng Wang	2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _28 October 2005_.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _See Continuation Sheet_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1, 11, 13, 20, 26, 31-33, 44, 51, 52, 65, 73, 74, 78-80, 82, 91, 96, 97, 108, 110 and 113-116_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

ey

Continuation of Disposition of Claims: Claims pending in the application are 1,11,13,20,26,31-33,44,51,52,65,73,74,78-80,82,91,96,97,108,110 and 113-116.

DETAILED ACTION

Response to Amendment

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/28/2005 has been entered. Claims 1-37, 40, 42-52, 54, 56, 57, 59-74, 76, 78-80, 82, 87-89, 91, 93, 94, 96-108, 110, and 113-116 are pending in the application. Claims 1, 11, 13, 20, 26, 31-33, 44, 51, 52, 65, 73, 74, 78-80, 82, 91, 96, 97, 108, 110 and 113-116 have been amended.

Response to Argument

Applicant's arguments filed 8/29/2005with respect to claim 1 and similar claims have been considered but are not found persuasive in view of the prior art of record. Tlaskal teaches the claim limitations set forth in the claim 1.

In other words, Tlaskal teaches a method and apparatus for creating an image formed by rendering at least a plurality of graphical objects to be composited according to a compositing expression tree known as a quad-tree wherein an image space are divided into a plurality of mutually exclusive regions and each of the regions being examined to determine those objects which contribute to the regions and **the expression tree is modified on the basis of the contribution of each of the objects with the region to form an optimized compositing**

<u>**expression**</u> for each region and compositing the image using each of the optimized compositing expressions.

That is to say, Tlaskal teaches a compositing tree known as a quad-tree being a group of mutually exclusive regions. The region group at the root of the tree may contain hundreds of regions including each node with the opacity region representation; See Figs 1-24 and Table 1 of column 12-1; to simultaneously represent each opaque region, transparent region and partially transparent region of the object represented by each node. For example, a child node of the root containing the leaf node regions groups represents an opacity region and the region group of a leaf node in a compositing tree could contain a single region representing the non-transparent area of the leaf node. The leaf node region group could contain two regions, <u>one representing the area of the leaf node which is completely opaque</u> (i.e., obscurance region representation) and <u>the other representing the remaining non-transparent area</u> (i.e., another opacity region representation having the opacity values associated with the region); see column 24.

Tlaskal teaches the obscurance region representation for at least one node in the expression tree as described in Table 1 of column 12-14 and Figs. 2-18 with the optimized expression tree by exploiting the effect <u>**opaque operands**</u> for obscurance regions representations have on the compositing operators in which there is no need to compute the result of the composite if an opaque region is over another region; column 20 and 23-24; thus identifying any region lying beneath the opaque region to be invisible. The obscurance region representation for regions in at least one node in the expression tree is separate from the opacity region representation of the at least one node for the transparent or the semi-transparent regions. The separate region group representations include the region group of a leaf node in a compositing

tree as analyzed in the opacity region representation and the region group of a leaf node in a compositing tree as analyzed in the obscurance region representation, in which each obscurance region representation is used to identify visible/invisible or opaque regions for a node or children nodes in the expression tree. The obscurance region representation may also represent each opaque region, transparent region and partially transparent region represented by each node because each region also identifies a corresponding region/sub-region to be visible/invisible in the image.

Tlaskal teaches within the context of a variety of operands and operators to identify visible or opaque regions represented by each node in the expression tree, thereby identifying the transparent regions associated with each node in the expression tree, in which the region representation for children nodes are propagated towards the root in the bottom-up traversal of the image region compositing (column 18 and 21-22). Tlaskal teaches optimizing the expression tree by exploiting the effect **opaque operands** for the obscurance region representations have on the compositing operators in which there is no need to compute the result of the composite if an opaque region is **over** (the over operator) another region. See column 20 and 23-24. Tlaskal discloses separate region group representations for at least two region groups including the region group of a leaf node in a compositing tree as analyzed in the opacity region representation and the region group of a leaf node in a compositing tree as analyzed in the obscurance region representation. See also Figs. 1-24; column 12-18 and 20-24.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-37, 40, 42-52, 54, 56-57, 59-74, 76, 78-80, 82, 87-89, 91, 93-94, 96-108, 110, and 113-116 are rejected under 35 U.S.C. 102(e) as being anticipated by Tlaskal et al. U.S. Pat. No. 6,795,589 (hereinafter Tlaskal).

3. Re Claims 1, and 11:

Tlaskal teaches a method of creating an image, said method comprising the steps of:

Determining an opacity region representation for each node of the expression tree (*A compositing tree known as a quad-tree is a group of mutually exclusive regions and the region group at the root of the tree may contain hundreds of regions including the node with the opacity region representation; Figs 1-24 and Table 1 of column 12-14; each child node of the root containing the leaf node regions groups represents an opacity region and the region group of a leaf node in a compositing tree could contain a single region representing the non-transparent area of the leaf node or the leaf node region group could contain two regions, one representing the area of the leaf node which is completely opaque and the other representing the remaining non-transparent area; column 24*), the opacity region representation comprising one or more of three predetermined values, each predetermined value distinctly identifying whether a corresponding region of an object represented by the node is an opaque region, a transparent

region or a partially transparent region such that the opacity region representation simultaneously represents each opaque region, transparent region and partially transparent region of the object represented by at least one node (*opacity region representation in a quad-tree are described in Figs. 2-18 and associated with every node in a compositing tree is **<u>a group of mutually exclusive regions wherein the opacity information are described in Table 1 of column 12-14 with the opaque, transparent and partially transparent values for the image regions</u>**; Therefore, the opacity region representation for each node of the expression tree comprises the opacity region representation for the children nodes and the obscurance region representation for the children nodes of each node. Each child node of the root containing the leaf node regions groups represents an opacity region and the region group of a leaf node in a compositing tree could contain a single region representing the non-transparent area of the leaf node. Each leaf node region group could contain two regions, one representing the area of the leaf node which is completely opaque and the other representing the remaining non-transparent area or even an arbitrary number of regions containing opaque regions, transparent regions and partially transparent regions; column 24*), wherein a union of each opacity region representation for the expression tree includes at least one of each of the three predetermined values (*The set operations of the quad-trees or intersections of regions are described in Figs. 1-24; column 12-16 and 23-24*);

Determining an obscurance region representation for at least one node based on an analysis of the opacity region representation associated with the at least one node, such that, for said image, the at least one node simultaneously comprises both the opacity region representation and the obscurance region representation (*the obscurance region representation for at least one*

node in the expression tree is also described in Table 1 of column 12-14 and Figs. 2-18; optimizing the expression tree by exploiting the effect opaque operands for obscurance regions representations have on the compositing operators in which there is no need to compute the result of the composite if an opaque region is over another region; column 20 and 23-24), with the obscurance region representation being separate from the opacity region representation of the at least one node (*i.e., separate region group representations inlcuding the region group of a leaf node in a compositing tree as analyzed in the opacity region representation and the region group of a leaf node in a compositing tree as analyzed in the obscurance region representation to identify visible or opaque regions for a node or children nodes in the expression tree*), the obscurance region representation being assigned one or more of a plurality of further predetermined values (*e.g., pixels within the obscurance region representation have one or more of a plurality of opacity values including the opacity values for pixels lying within the opaque region*), each further predetermined value of the obscurance region representation distinctly identifying whether a corresponding region of the object represented by the at least one node is visible in the image (*Identifying visible or opaque region for a node versus the other nodes in the expression tree and thereby identifying the visible regions associated with the expression tree wherein the region representation for children nodes are propagated towards the root in a bottom-up traversal of the image region compositing in column 18 and 21-22. See Figs. 1-24; column 12-18 and 23-24)*;

Partitioning the object into a plurality of regions (*e.g., an image object may be represented by a leaf node. A region group for a leaf node will typically contain one or more regions as represented by the leaf node in the expression tree, which together fully contain the*

non-transparent area of the graphical object represented by the leaf node wherein the non-transparent area of some graphical object can be divided into two regions, one fully opaque and the other with ordinary opacity; Figs. 1-24; column 12-16 and 23-24);

Overlaying the obscurance region representation on the partitioned object such that the partitioned object is substantially encompassed within the obscurance region representation (*Region compositing or region arithmetic involves many different nodes in the expression tree having some particular region descriptions for opaque areas, regular opacity areas or transparent areas wherein the region representation for children nodes are propagated towards the root in a first bottom-up traversal for the image region compositing in Figs. 1-24; column 12-16 and 21-24*);

Traversing the overlaid obscurance region representation to identify any of the plurality of regions of the partitioned object which include at least a portion of the visible region (*Identifying visible or transparent region and non-transparent areas or regions for a node versus the other nodes in the expression tree and thereby identifying the transparent regions associated with the expression tree wherein the region representation for children nodes are propagated towards the root in a first bottom-up traversal of the image region compositing in column 18 and 21-22. See Figs. 1-24; column 12-18 and 23-24*);

Creating the image by rendering the identified regions (*The image is rendered by the compositing tree through for example traversals of nodes in the expression tree. See Figs. 1-24; column 12-18 and 21-24*).

4. Re Claims 33, 51, 52, 80, 96, and 97:

Tlaskal teaches a method of processing an expression, said method comprising the steps of

Determining an opacity region representation for at least one node of the expression tree (*A compositing tree known as a quadtree is a group of mutually exclusive regions and the region group at the root of the tree may contain hundreds of regions; Figs 1-24 and Table 1 of column 12-14*), the opacity region representation comprising one or more of three predetermined values, each predetermined value distinctly identifying whether a corresponding region of an object represented by the at least one node is an opaque region, a transparent region or a partially transparent region such that the opacity region representation simultaneously represents each opaque region, transparent region and partially transparent region of the object represented by at least one node (*opacity region representation are described in Figs. 2-18 and associated with every node in a compositing tree is a group of mutually exclusive regions wherein the opacity information are described Table 1 of column 12-14 which contains opaque, transparent and partially transparent values of the image regions* and *the set operations of the quadtree are described in Figs. 1-24; column 12-16 and 23-24*);

Determining an obscurance region representation for at least one node based on an analysis of the opacity region representation associated with the at least one node, such that, for said image, the at least one node simultaneously comprises both the opacity region representation and the obscurance region representation (*the obscurance region representation for at least one node in the expression tree is also described in Table 1 of column 12-14 and Figs. 2-18; optimizing the expression tree by exploiting the effect opaque operands for obscurance regions representations have on the compositing operators in which there is no need to compute the*

result of the composite if an opaque region is over another region; column 20 and 23-24), with the obscurance region representation being separate from the opacity region representation of the at least one node (*i.e., separate region group representations inlcuding the region group of a leaf node in a compositing tree as analyzed in the opacity region representation and the region group of a leaf node in a compositing tree as analyzed in the obscurance region representation to identify visible or opaque regions for a node or children nodes in the expression tree*), the obscurance region representation being assigned one or more of a plurality of further predetermined values (*e.g., pixels within the obscurance region representation have one or more of a plurality of opacity values including the opacity values for pixels lying within the opaque region*), each further predetermined value of the obscurance region representation distinctly identifying whether a corresponding region of the object represented by the at least one node is visible in the image (*Identifying visible or opaque region for a node versus the other nodes in the expression tree and thereby identifying the visible regions associated with the expression tree wherein the region representation for children nodes are propagated towards the root in a bottom-up traversal of the image region compositing in column 18 and 21-22. See Figs. 1-24; column 12-18 and 23-24)*; and

Using the separate obscurance region representations determined for the expression tree to optimize the processing of the expression tree (*e.g., optimizing the expression tree by exploiting the effect opaque operands have on the compositing operators in which there is no need to compute the result of the composite if an opaque region is over another region; column 20 and 23-24*).

Claim 2:

The claim 2 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of traversing the expression tree to detect the node including the obscurance region representation. However, Tlaskal further discloses the claimed limitation of traversing the expression tree to detect the node including the obscurance region representation (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 3:

The claim 3 encompasses the same scope of invention as that of claim 1 except additional claimed limitation that the obscurance region representation is traversed for each of the plurality of regions of the partitioned object. However, Tlaskal further discloses the claimed limitation that the obscurance region representation is traversed for each of the plurality of regions of the partitioned object (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 4:

The claim 4 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of producing a map for the plurality of regions, wherein said map at least indicates any region which includes at least a portion of the visible region. However, Tlaskal further discloses the claimed limitation of producing a map for the plurality of regions, wherein said map at least indicates any region which includes at least a portion of the visible region (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 5:

The claim 5 encompasses the same scope of invention as that of claim 1 except additional claimed limitation that the map includes a flag for each of the regions which includes at least a

portion of the visible region. However, Tlaskal further discloses the claimed limitation that the map includes a flag for each of the regions which includes at least a portion of the visible region (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 6:

The claim 6 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of "run length encoding". However, Tlaskal further discloses the claimed limitation of "run length encoding" (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 7:

The claim 7 encompasses the same scope of invention as that of claim 4 except additional claimed limitation that said map is traversed in a predetermined order to determine said identified regions. However, Tlaskal further discloses the claimed limitation that said map is traversed in a predetermined order to determine said identified regions (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 8:

The claim 8 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of "right leaning expression tree". However, Tlaskal further discloses the claimed limitation of "right leaning expression tree" (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 9:

The claim 9 encompasses the same scope of invention as that of claim 1 except additional claimed limitation that the expression is a graphic object tree. However, Tlaskal further discloses the claimed limitation that the expression tree is a graphic object tree (*See Figs. 1-24; column 12-16 and 23-24*). The examiner interprets a graphic object tree as a quadtree.

Claim 10:

The claim 10 encompasses the same scope of invention as that of claim 1 except additional claimed limitation that the obscurance region representation is a quadtree. However, Tlaskal further discloses the claimed limitation that the obscurance region representation is a quadtree (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 12:

The claim 12 encompasses the same scope of invention as that of claim 11 except additional claimed limitation that the obscurance region representation is traversed for each of the plurality of regions of the partitioned object. However, Tlaskal further discloses the claimed limitation that the obscurance region representation is traversed for each of the plurality of regions of the partitioned object (*See Figs. 1-24; column 12-16 and 23-24*).

Claims 13-19:

The claim 13, 14, 15, 16, 17, 18 and 19 encompasses the same scope of invention as that of claim 11 except additional claimed limitation that is respectively identical to claim 4, 5, 6, 7, 8, 9, 10. The claims are rejected for the same reason set forth in above.

Claims 20-25:

The claim 20, 21, 22, 23, 24, 25 encompasses the same scope of invention as that of claim 1, 2, 3, 4, 9, 10 except additional claimed limitation of "an apparatus". However, Tlaskal

further discloses the claimed limitation of "an apparatus" (see the abstract, figure 19; column 36).

Claims 26-30:

The claim 26, 27, 28, 29, 30 encompasses the same scope of invention as that of claim 11, 12, 13, 18, 19 except additional claimed limitation of "an apparatus". However, Tlaskal further discloses the claimed limitation of "an apparatus" (see the abstract, figure 19; column 36).

Claims 31:

The claim 31 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of "a computer program for a computer comprising software code portions for performing a method". However, Tlaskal further discloses the claimed limitation of "a computer program for a computer comprising software code portions for performing a method" (Figs. 23-24; column 36).

Claims 32:

The claim 32 encompasses the same scope of invention as that of claim 1 except additional claimed limitation of "a computer readable medium storing a computer program". However, Tlaskal further discloses the claimed limitation of "a computer readable medium storing a computer program" (Figs. 23-24; column 36).

Claim 34:

The claim 34 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of the opacity region representation being a first hierarchical structure. However, Tlaskal further discloses the claimed limitation of the opacity region representation being a first hierarchical structure (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 35:

The claim 35 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of the obscurance region representation being a second hierarchical structure. However, Tlaskal further discloses the claimed limitation of the obscurance region representation being a second hierarchical structure (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 36:

The claim 36 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of identifying nodes representing complex graphical object. However, Tlaskal further discloses the claimed limitation of identifying nodes representing complex graphical object (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 37:

The claim 37 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of determining an opacity region representation for each node identified. However, Tlaskal further discloses the claimed limitation of determining an opacity region representation for each node identified (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 40:

The claim 40 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of the opacity region representation of a child node being at least propagated to a parent node associated with the child node. However, Tlaskal further discloses the claimed limitation of the opacity region representation of a child node being at least propagated to a parent node associated with the child node (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 42:

The claim 42 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of the obscurance region representation of a child node being at least propagated to a parent node associated with the child node. However, Tlaskal further discloses the claimed limitation of the obscurance region representation of a child node being at least propagated to a parent node associated with the child node (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 43:

The claim 43 encompasses the same scope of invention as that of claim 34 except additional claimed limitation that the hierarchical structure is dependent on an operation associated with a node for which the first hierarchical structure is constructed.

However, Tlaskal further discloses the claimed limitation that the hierarchical structure is dependent on an operation associated with a node for which the first hierarchical structure is constructed (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 44:

The claim 44 encompasses the same scope of invention as that of claim 35 except additional claimed limitation that the second hierarchical structure for a node are constructed by combining any first hierarchical structures associated with the node. However, Tlaskal further discloses the claimed limitation that the second hierarchical structure for a node are constructed by combining any first hierarchical structures associated with the node (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 45:

The claim 45 encompasses the same scope of invention as that of claim 34 except additional claimed limitation of each leaf node of the first hierarchical structure being assigned one of the predetermined values depending on an opacity of a region associated with said leaf node. However, Tlaskal further discloses the claimed limitation of each leaf node of the first hierarchical structure being assigned one of the predetermined values depending on an opacity of a region associated with said leaf node (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 46:

The claim 46 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of "right leaning tree". However, Tlaskal further discloses the claimed limitation of "right leaning tree" (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 47:

The claim 47 encompasses the same scope of invention as that of claim 34 except additional claimed limitation that each node of the first hierarchical structure comprises a pointer

indicating children nodes associated with the node. However, Tlaskal further discloses the claimed limitation that each node of the first hierarchical structure comprises a pointer indicating children nodes associated with the node (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 48:

The claim 48 encompasses the same scope of invention as that of claim 35 except additional claimed limitation that the second hierarchical structure is quadtree. However, Tlaskal further discloses the claimed limitation that the second hierarchical structures is a quadtree (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 49:

The claim 49 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of the opacity region representation being a bounding box. However, Tlaskal further discloses the claimed of the opacity region representation being a bounding box (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 50:

The claim 50 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of the obscurance region representation being a bounding box. However, Tlaskal further discloses the claimed limitation of the obscurance region representation being a bounding box (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 54:

The claim 54 encompasses the same scope of invention as that of claim 52 except additional claimed limitation that each node having an associated complex graphical object is tagged. However, Tlaskal further discloses the claimed limitation that each node having an associated complex graphical object is tagged (*See Figs. 1-24; column 12-16 and 23-24*).

Claim 56:

The claim 56 encompasses the same scope of invention as that of claim 52 except additional claimed limitation that opacity information is propagated down the expression tree. However, Tlaskal further discloses the claimed limitation that opacity information is propagated down the expression tree (*See Figs. 1-24; column 12-17 and 23-24*).

Claim 57:

The claim 57 encompasses the same scope of invention as that of claim 52 except additional claimed limitation that an opacity region representation of a child node is at least propagated to a parent node associated with the child node. However, Tlaskal further discloses the claimed limitation that an opacity region representation of a child node is at least propagated to a parent node associated with the child node (*See Figs. 1-24; column 12-17 and 23-24*).

Claim 59:

The claim 59 encompasses the same scope of invention as that of claim 52 except additional claimed limitation of an obscurance region representation of a parent node being at least propagated to a child node associated with the parent node. However, Tlaskal further discloses the claimed limitation of the obscurance region representation of a parent node being at

least propagated to a child node associated with the parent node (*See Figs. 1-24; column 12-17 and 23-24*).

Claim 60:

The claim 60 encompasses the same scope of invention as that of claim 52 except additional claimed limitation of the opacity region representation being dependent on an operation associated with a node for which the first region representation is determined. However, Tlaskal further discloses the claimed limitation of the opacity region representation being dependent on an operation associated with a node for which the first region representation is determined (*See Figs. 1-24; column 12-17 and 23-24*).

Claim 61:

The claim 61 encompasses the same scope of invention as that of claim 52 except additional claimed limitation of the obscurance region representation for a node being determined by combining any first region representations associated with the node. However, Tlaskal further discloses the claimed limitation of the obscurance region representation for a node being determined by combining any first region representations associated with the node (*See Figs. 1-24; column 12-17 and 23-24*).

Claim 62:

The claim 62 encompasses the same scope of invention as that of claim 52 except additional claimed limitation of each leaf node of the opacity region representation being assigned a value depending on an opacity of a region associated with the leaf node.

However, Tlaskal further discloses the claimed limitation of each leaf node of the opacity region representation being assigned a value depending on an opacity of a region associated with the leaf node (*See Figs. 1-24; column 12-17 and 23-24*).

Claim 63:

The claim 63 encompasses the same scope of invention as that of claim 52 except additional claimed limitation that each node of the opacity region representation comprises a pointer to indicate children nodes associated with the node. However, Tlaskal further discloses the claimed limitation that each node of the opacity region representation comprises a pointer to indicate children nodes associated with the node (*See Figs. 1-24; column 12-17 and 23-24*).

Claim 64:

The claim 64 encompasses the same scope of invention as that of claim 52 except additional claimed limitation that the opacity and obscurance region representations are quadtrees. However, Tlaskal further discloses the claimed limitation that the opacity and obscurance region representations are quadtrees (*See Figs. 1-24; column 12-17 and 23-24*).

Claims 65-74 and 76:

The claim 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 76 encompasses the same scope of invention as that of claim 33, 34, 35, 36, 37, 48, 49, 50, 51, 52, 54 except additional claimed limitation of "an apparatus". However, Tlaskal further discloses the claimed limitation of "an apparatus" (see the abstract, figure 19 and column 36).

Claims 78:

The claim 78 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of "a computer program for a computer comprising software code portions for performing a method". However, Tlaskal further discloses the claimed limitation of "a computer program for a computer comprising software code portions for performing a method" (Figs. 19, 23-24 and column 36).

Claims 79:

The claim 79 encompasses the same scope of invention as that of claim 33 except additional claimed limitation of "a computer readable medium storing a computer program". However, Tlaskal further discloses the claimed limitation of "a computer readable medium storing a computer program" (figures 19, 23-24 and column 36).

Claim 82:

The claim 82 encompasses the same scope of invention as that of claim 81 except additional claimed limitation of identifying nodes of the expression tree, for which a compositing quadtree is required, depending on the opacity quadtree associated with the node. However, Tlaskal further discloses the claimed limitation of identifying nodes of the expression tree, for which a compositing quadtree is required, depending on the opacity quadtree associated with the node (*See Figs. 1-24; column 12-17 and 23-24*).

Claim 87:

The claim 87 encompasses the same scope of invention as that of claim 80 except additional claimed limitation that the opacity quadtree of a child node is at least propagated to a

parent node associated with the child node. However, Tlaskal further discloses the claimed limitation that the opacity quadtree of a child node is at least propagated to a parent node associated with the child node (*See Figs. 1-24; column 12-17 and 23-24*).

Claim 88:

The claim 88 encompasses the same scope of invention as that of claim 87 except additional claimed limitation that an opacity quadtree of the parent node is determined by merging at least two further opacity quadtrees.

However, Tlaskal further discloses the claimed limitation that the opacity quadtree of the parent node is determined by merging at least two further opacity quadtrees (*See Figs. 1-24; column 12-17 and 23-24*).

Claim 89:

The claim 89 encompasses the same scope of invention as that of claim 87 except additional claimed limitation that an opacity quadtree of the parent node is determined by merging at least one opacity quadtree and a bounding box.

However, Tlaskal further discloses the claimed limitation that an opacity quadtree of the parent node is determined by merging at least one opacity quadtree and a bounding box (*See Figs. 1-24; column 10, 12-17 and 23-24*).

Claim 91:

The claim 91 encompasses the same scope of invention as that of claim 81 except additional claimed limitation that an obscurance quadtree of a parent node is at least propagated

to a child node associated with the parent node. However, Tlaskal further discloses the claimed limitation that an obscurance quadtree of a parent node is at least propagated to a child node associated with the parent node (*See Figs. 1-24; column 10, 12-17 and 23-24*).

Claim 93:

The claim 93 encompasses the same scope of invention as that of claim 80 except additional claimed limitation that each leaf node of the obscurance quadtree is assigned a value depending on an opacity of a region associated with the leaf node.

However, Tlaskal further discloses the claimed limitation that each leaf node of the obscurance quadtree is assigned a value depending on an opacity of a region associated with the leaf node (*See Figs. 1-24; column 10, 12-17 and 23-24*).

Claim 94:

The claim 94 encompasses the same scope of invention as that of claim 80 except additional claimed limitation that each node of the opacity quadtree comprises a pointer to indicate children nodes associated with the node. However, Tlaskal further discloses the claimed limitation that each node of the opacity quadtree comprises a pointer to indicate children nodes associated with the node (*See Figs. 1-24; column 10, 12-17 and 23-24*).

Claim 98:

The claim 98 encompasses the same scope of invention as that of claim 97 except additional claimed limitation that is identical to claim 81. The claims are rejected for the same reason set forth in claim 81.

Claim 99:

The claim 99 encompasses the same scope of invention as that of claim 98 except additional claimed limitation that the opacity region representation comprises a second hierarchical structure representing an opacity of a region associated with a node. However, Tlaskal further discloses the claimed limitation that the opacity region representation comprises a second hierarchical structure representing an opacity of a region associated with a node (*See Figs. 1-24; column 10, 12-17 and 23-24*).

Claim 100:

The claim 100 encompasses the same scope of invention as that of the claim 98 except additional claim limitation of the opacity region representation being a bounding box representing an opacity of a region associated with a node. However, Tlaskal further discloses the claim limitation of the opacity region representation being a bounding box representing an opacity of a region associated with a node (*See Figs. 1-24; column 10, 12-17 and 23-24*).

Claim 101:

The claim 101 encompasses the same scope of invention as that of claim 98 except additional claimed limitation that said first hierarchical structure is dependent on said opacity region representation. However, Tlaskal further discloses the claimed limitation that said first

hierarchical structure is dependent on said opacity region representation (*See Figs. 1-24; column 10, 12-17 and 23-24*).

Claim 102:

The claim 102 encompasses the same scope of invention as that of claim 97 except additional claimed limitation of the first traversal being a bottom-up traversal. However, Tlaskal further discloses the claimed limitation of the first traversal being a bottom-up traversal (*See Figs. 1-24; column 10, 12-17 and 23-24*).

Claim 103:

The claim 103 encompasses the same scope of invention as that of claim 99 except additional claimed limitation that is identical to claim 87. The claims are rejected for the same reason set forth in claim 87.

Claim 104:

The claim 104 encompasses the same scope of invention as that of claim 103 except additional claimed limitation that opacity region representation of the parent node is determined by merging at least two second hierarchical structures.

However, Tlaskal further discloses the claimed limitation that opacity region representation of the parent node is determined by merging at least two second hierarchical structures (*See Figs. 1-24; column 10, 12-17 and 23-24*).

Claim 105:

The claim 105 encompasses the same scope of invention as that of claim 103 except additional claimed limitation that opacity region representation of the parent node is determined by merging at least one second hierarchical structure and a bounding box.

However, Tlaskal further discloses the claimed limitation that opacity region representation of said parent node is determined by merging at least one second hierarchical structure and a bounding box (*See Figs. 1-24; column 10, 12-17 and 23-24*).

Claim 106:

The claim 106 encompasses the same scope of invention as that of claim 97 except additional claimed limitation of said second traversal being a top-down traversal. However, Tlaskal further discloses the claimed limitation of said second traversal being a top-down traversal (*See Figs. 1-24; column 10, 12-17 and 23-24*).

Claim 107:

The claim 107 encompasses the same scope of invention as that of claim 106 except additional claimed limitation that a first hierarchical structure of a parent node is at least propagated to a child node associated with said parent node. However, Tlaskal further discloses the claimed limitation that a first hierarchical structure of a parent node is at least propagated to a child node associated with said parent node (column 8, lines 33-44).

Claims 108, 110, 113-114:

The claim 108, 110, 113, 114 encompasses the same scope of invention as that of claim 80, 82, 96, 97 except additional claimed limitation of "an apparatus". However, Tlaskal further discloses the claimed limitation of "an apparatus" (see the abstract, figure 19 and column 36). The claim 108, 109, 110, 113, or 114 is therefore rejected for the same reason set forth in claim 80, 82, 96 or 97 respectively.

Claims 115:

The claim 115 encompasses the same scope of invention as that of claim 80 except additional claimed limitation of "a computer program for a computer comprising software code portions for performing a method". However, Tlaskal further discloses the claimed limitation of "a computer program for a computer comprising software code portions for performing a method" (*See Figs. 19 and column 36*).

Claims 116:

The claim 116 encompasses the same scope of invention as that of claim 97 except additional claimed limitation of "a computer readable medium storing a computer program". However, Tlaskal further discloses the claimed limitation of "a computer readable medium storing a computer program" (Fig. 19 and column 36).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (571) 272-7665. The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (571) 272-7664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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jcw

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